APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/659,485	TAMIL, LAKSHMAN S.
Office Action Summary	Examiner	Art Unit	
	Leslie Pascal	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 June 2007</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-62 and 68</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>1-62 and 68</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.   Claims 24-25, 36 and 52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. These claims claim a NX1 semiconductor optical amplifier. It is unclear what this is. There is no SOA shown. Are there numerous SOA elements in this device or just one? Is the SOA providing the switching? If it is how is it providing switching? In regard to claim 36, the same issue applies because in claim 35, the applicant says that the switch is N to 1. Claim 36 says that it is an SOA. This appears to mean that this is an N to 1 SOA.

In regard to the applicants' comments, these do not clear up any of the examiner's questions. The examiner has made it clear that it is not understood what a "1XN" or an "NX1" SOA is. To just argue that the specification says that it is a "1XN" or an "NX1" SOA, does not clarify what it is. The examiner has stated that it is not clear whether this is one device or 16 separate SOAs. The examiner has done EAST word searches of all US patents. There appear to be no patents with "1XN" or "NX1" SOAs. The applicant claims this, as if it is a well-known device. The examiner has made it clear that this device does not appear to be a well-known device. The applicant argues that various SOAs were known-BUT DOES NOT SAY THAT AN _NX1_ OR _1XN_ SOA are

well known. The applicant points to pages 19-20, paragraph 49 of the specification.

This portion of the specification is vague as to what NX1 or 1XN SOAs are. Are they

one switch made up of 16 SOAs? Or is it one device that provides it all. This is what

the specification seems to say, since paragraph 49 says that there are 16 such devices.

If the later is the case, the applicant should provide a reference teaching that this is well

known. (I.e. the applicant needs to provide a reference that teaches a 1XN and NX1

SOA). To argue that SOAs are so well known that an applicant can claim any type of

SOA, even if one of ordinary skill in the art cannot comprehend what the elements

actually is-is not persuasive. If the applicants' argument is that a 1XN SOA is a well

known device, and the references used by the examiner teach SOAs, the examiner is

using the applicants' statements that since SOAs are well known – a 1XN or NX1 SOAs

are well known.

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

  (a) A patent may not be obtained though the invention is not identically disclosed or described as set

forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

art are such that the subject matter as a whole would have been obvious at the time the invention was made to

a person having ordinary skill in the art to which said subject pertains. Patentability shall not be negatived by

the manner in which the invention was made.

4.   Claims 1-5, 8-10, 22-28, 31-40, 43-48, 50-54, 57-62 and 68 are rejected under

35 U.S.C. 103(a) as being unpatentable over Jagannathan (6763192).

    Jagannathan teaches an optical matrix switch (525) which inherently has plural

inputs and plural outputs. It is well known that a switch matrix has intersections of the

input and output links (i.e. matrix). He teaches that it is well known to use SOAs as the

switching elements in an optical switch matrix (column 1, lines 29-37). It would have

been obvious to use SOAs as the switching elements in the switching matrix of

elements 525 since they switch extremely fast (at nano second response range) and

are able to act as synchronous or asynchronous fixed or variable length packet

switching apparatus (column 1, lines 32-37). In regard to the time interval, see column

4, lines 15-21. In regard to avoiding contention, see column 4, lines 47-55. It is obvious

that the mapping and instructions of how to route the signals and how long the switches

are to remain open are used to avoid contention problems. In regard to claim 4, see

column 4, lines 47-55 in which he talks about the time interval. In regard to claim 5, see

claim 16 of Jagannathan. He teaches switching plural wavelengths from one input to an

output. It would appear that the signal would have to be multiplexed in some way in

order to be switched from the input to the output. Jagannathan teaches a packet

scheduler (405, 505, 520), a switch controller (410) which provides control of the switch

(525). In regard to claim 10, Jagannathan teach that the signal can be sent to a single

output. In regard to the cross bar switch of claim 22, it would appear that by using a

1XN or NX1 SOA, such a crossbar would be made. The applicant appears to argue in

regard to the 112 rejection, that such elements are well known. So, it appears that

would have been obvious in view of Jagannathan since he teaches that it is well known

to use SOAs. In regard to claims 40 and 28, it would appear inherent that elements with

"sufficient bandwidth" would work in the system or the system would not operate

correctly. In regard to claim 45, Jagannathan teach that it is well known to have plural

ingress (105) and egress Edge units connected to switch node devices (see figure 1). It would have been obvious to have plural edge units as taught by the prior art in order to provide proper connections from the edge units and switching devices since Jagannathan teach that it is well known. In regard to claims 9 and 47-48, it would have been obvious to combine information that is going to the same egress node (or output) together as a multiplexed signal in order to ensure that signals destined for the same egress node (output node) all make it to the egress node without collision with others or each other.

5.   Claims 11-12, 14-16, 19-21, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagannathan (6763192) in view of Shiragaki et al (5757526)

Although Jagannathan (6763192) do not specifically teach that his switch matrix is made up of plural switching elements, Shiragaki et al teaches that it is well known (FIGURE 10) to use a switching matrix which is made up of plural matrix elements connected to each other (figure 10). It would have been obvious to use an array of matrix as taught by Shiragaki as the matrix switch of Jagannathan (6763192). It would have been obvious to use SOAs in the switching elements as taught by Jagannathan as well known in the prior art.

6.   Claims 11-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robissa et al (2002/0163693).

Robissa et al teach plural switch matrices (figures 22-35, specifically figure 26) which have plurality of inputs (inputs), plural outputs (outputs), and plural path switches with specific path switch elements (402) a plurality of cross links (see specifically figures

26-29). With regard to the cross links, see paragraph 100 of Robissa et al in which he teaches that the connections may be fibers (links). It would have been obvious, if not inherent, to use links between the matrix in order to provide proper alignment between the switch matrix elements. In regard to claim 15, it would have been obvious to have just one input communicate with just one output, if the signal is only intended for one output. See paragraph 341 in which he teaches that the amount that the switch element is activated controls which percentage of the signal is sent to the intended switch.

7.   Claims 13 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robissa et al (2002/0163693) as applied to claims 11-12 and 14-16 and further in view of Jagannathan (6763192) or in the alternative Jagannathan in view of Robissa. Although Robissa et al do not teach specifics about the type of switch elements used, it would have been obvious to use the SOAs taught by Jagannathan as the switch elements of Robissa et al. In the alternative, it would have been obvious to use Jagannathan in view of Robissa by replacing the switch matrix specifics of Jagannathan with the 3d switch matrix of Robissa et al since Robissa teaches that his system could be used 2D as taught by Jagannathan or 3D. Jagannathan teaches that packet scheduler and switch controller of claims 19-21

8.   Claims 6-7, 29-30, 41-42 and 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagannathan and further in view of Antoniades et al (2002/0048066).

Although Jagannathan does not teach specifics about the conditioning means at the input and output of the switch, Antoniades et al teaches that it is well known to

amply signals at the input and output in order to provide stronger signals and that it is obvious to filter them (paragraph 80). It would have been obvious to amplify the inputs and outputs in order to provide a stronger signals and it would have been obvious to filter the signals in order to reduce ripple.

9.   Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robissa as applied to claims 11-12 in view of Antoniades et al (2002/0048066).

Although Robissa does not teach specifics about the conditioning means at the input and output of the switch, Antoniades et al teaches that it is well known to amply signals at the input and output in order to provide stronger signals and that it is obvious to filter them (paragraph 80). It would have been obvious to amplify the inputs and outputs in order to provide a stronger signals and it would have been obvious to filter the signals in order to reduce ripple.

10.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11.   Claims 1-5, 8-10, 22-28, 31-40, 43-54,57-62 and 68 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-73 of U.S. Patent No. 6665495. Although the conflicting claims are not identical, they are not patentably distinct from each other because although the patent claims more than the application, the claims in the application read on the claims in the patent. In regard to claims 1-2, see claim 7 of the patent. With regard to the contention in claim 1, see lines 21-23 of the patent. In regard to claim 3, see claim 9 of the patent. . In regard to the time interval and claim 4, see claims 3 and 33 of the patent. . In regard to claim 5, see claim 10 of the patent. In regard to the core controller, see claim 1. with regard to the packet scheduler see claim 3 with regard to having "sufficient bandwidth", see claim 10 of the patent.

12.   Claims 6-7, 29-30, 41-42 and 55-56 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1- 73 of U.S. Patent No. 6665495 in view of Antoniades et al (2002/0048066).

Although Patent No. 6665495 does not teach specifics about the conditioning means at the input and output of the switch, Antoniades et al teaches that it is well known to amply signals at the input and output in order to provide stronger signals and that it is obvious to filter them (paragraph 80). It would have been obvious to amplify the inputs and outputs in order to provide a stronger signals and it would have been obvious to filter the signals in order to reduce ripple

13.   In regard to the applicants' comments with regard to the 112 rejection, these do not clear up any of the examiner's questions. The examiner has made it clear that it is not understood what a "1XN" or an "NX1" SOA is. To just argue that the specification says that it is a "1XN" or an "NX1" SOA, does not clarify what it is. The examiner has stated that it is not clear whether this is one device or 16 separate SOAs. The examiner has done EAST word searches of all US patents. There appear to be no patents with "1XN" or "NX1" SOAs. The applicant claims this as if it is a well-known device. The examiner has made it clear that this device does not appear to be a well-known device. The applicant argues that various SOAs were known-BUT DOES NOT SAY THAT AN NX1 OR 1XN SOA are well known. The applicant points to pages 19-20, paragraph 49 of the specification. This portion of the specification is vague as to what NX1 or 1XN SOAs are. Are they one switch made up of 16 SOAs? Or is it one device that provides it all. This is what the specification seems to say since paragraph 49 says that there are 16 such devices. If the later is the case, the applicant should provide a reference teaching that this is well known. (i.e. the applicant needs to provide a reference that teaches a 1XN and NX1 SOA). To argue that SOAs are so well known that an applicant can claim any type of SOA, even if one of ordinary skill in the art cannot comprehend what the elements actually is-is not persuasive. The applicants' arguments with regard to it being obvious to one of ordinary skill to know how to use an SOA as a 1XN or NX1 SOA bolsters the examiner's art rejections with regard to it being obvious since the references taught use SOAs.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Leslie Pascal whose telephone number is 571-272-

3032. The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leslie Pascal
Primary Examiner
Art Unit 2613